UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/332,264	06/11/1999	THOMAS HUNTINGTON WOOD	WOOD27/56115	2709

26453 7590 08/12/2002

BAKER & MCKENZIE
805 THIRD AVENUE
NEW YORK, NY 10022

EXAMINER
LI, SHI K

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 08/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/332,264	Applicant(s) WOOD, THOMAS HUNTINGTON	
	Examiner Shi K. Li	Art Unit 2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 4-5 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Zirngibl (U.S. Patent 5,550,666).

Regarding claims 1-2 and 4-5, Zirngibl discloses a data communication system in FIG. 1 comprising a distribution fiber 171, a splitter 165, a plurality of drop fibers 168, a head-end (central office) 130, a first optical network unit 190_1, and second optical network unit 190_2. The first network unit receives upstream data from 198_1 and modulates a subcarrier as described in col. 5, lines 12-13; the second network unit receives upstream data from 198_2 and modulates a subcarrier.

Regarding claim 13, the central office transmits downstream data stream 141 to first and second network unit via the outside plant.

Regarding claims 14-15, the central office of FIG. 1 includes a transmitter 140, receiver 150 and wavelength-division multiplexing device 170; each network unit includes a transmitter 198, a receiver 195 and a wavelength-division multiplexing device 193. The receiver in the head-end and the transmitters in the network units, i.e., upstream signal, operate at 1.3 μm and the transmitter in the head-end and the receivers in the network units, i.e., downstream signal, operate at 1.5 μm as described in col. 2, lines 39-41.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zirngibl (U.S. Patent 5,550,666) in view of Amemiya et al. (M. Amemiya et al., "Low Cost FTTH system Based on PDS Architecture", Global Telecommunications Conference, 1997, GLOBECOM '97, IEEE, Volume: 2,1997).

Zirngibl has been discussed above in regard to claim 1. The difference between Zirngibl and the claimed invention is that Zirngibl does not show the Ethernet interface. Amemiya et al. teaches the interfaces for the network units and the head-end in FIG. 1. The first optical network unit includes an Ethernet adapter circuit (10 base-T) which is coupled via another Ethernet interface (labeled IF) in the head-end to the router. Ethernet is a popular interface for connecting to the Internet and is widely available in personal computers and workstations. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the network units receive upstream data via an Ethernet interface and include an Ethernet interface in the head-end, as taught by Amemiya et al., in the data communication system of Zirngibl because it is a popular interface for connecting to the Internet.

5. Claims 7, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zirngibl (U.S. Patent 5,550,666) in view of Bodeep et al. (U.S. Patent 5,822,102).

Zirngibl has been discussed above in regard to claim 1. Regarding claim 7, the difference between Zirngibl and the claimed invention is that Zirngibl does not show the details of the network unit even through it suggests the inclusion of a transmitter and a modulator in col. 8,

line 66-col. 9, line 6. Bodeep et al. teaches the details of a network unit in FIG. 1, which includes adapter circuit 353, modulator 354 and transmitter 340. By modulating subcarriers of different frequencies allows different users to send upstream data simultaneously without collision. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the adapter circuit, the modulator and the transmitter in the network units of the communication system of Zirngibl, as taught by Bodeep et al., because the components are necessary for subcarrier multiplexing.

Regarding claim 9, Bodeep et al. teaches the use of QPSK modulation for upstream data in FIG. 4B, col. 1, line 35 and col. 3, lines 16-18.

Regarding claim 11, Zirngibl suggests the use of 1.3 μm for upstream signals.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zirngibl and Bodeep et al. as applied to claim 7 above, and further in view of Feldman et al. (U.S. Patent 6,137,607).

Zirngibl and Bodeep et al. have been discussed above in regard to claim 7. The difference between the modified communication system of Zirngibl and Bodeep et al. and the claimed invention is that the network units of the modified communication system do not include a bias control circuit. Feldman et al. teaches the use of bias control for reducing optical beat interference as illustrated in FIG. 2. Feldman et al. describes the operation of the bias control 204 in col. 2, lines 60-67 such that the bias control circuit shuts off the laser (transmitter) in the absence of user data. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bias control circuit, as taught by Feldman et al., into the modified system of Zirngibl and Bodeep et al. to reduce optical beat interference.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zirngibl and Bodeep as applied to claim 7 above, and further in view of Watanabe (U.S. Patent 5,896,211).

Zirngibl and Bodeep et al. have been discussed above in regard to claim 7. The difference between the modified communication system of Zirngibl and Bodeep et al. and the claimed invention is the modulation method for upstream data. Zirngibl suggests the use of subcarrier multiplexing (SCM) without specifying the exact modulation method while the claimed invention uses frequency-shift keying (FSK) modulation. Watanabe teaches the use of FSK as a modulation method for SCM in FIG. 5 and col. 5, lines 52-67. In fact, Watanabe lists a number of modulation methods and choosing any one of them would be a design choice depending on the particular application. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use FSK as a modulation method, as taught by Watanabe, in the modified system of Zirngibl and Bodeep et al. as a design choice based on the particular application.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zirngibl and Bodeep et al. as applied to claim 7 above, and further in view of Irie et al. (K. Irie et al., "Large Capacity Multiplex-Port Brouter for Regional PC Communication Network System", IEEE 1998 International Zurich Seminar on Broadband Communications. Accessing, Transmission, Networking Proceedings, pp. 273-278).

Zirngibl and Bodeep et al. have been discussed above in regard to claim 7. The difference between the modified communication system of Zirngibl and Bodeep et al. and the claimed invention is that neither Bodeep et al nor Zirngibl includes an Ethernet interface. Irie et al. teaches the inclusion of an Ethernet interface with the ONU in p.273, right col., second

paragraph. Ethernet is a popular interface for connecting to the Internet and is widely available in personal computers and workstations. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an Ethernet interface in the adapter circuit of the modified system of Zirngibl and Bodeep et al., as taught by Irie et al., because Ethernet is a popular interface for connecting to the Internet.

Response to Arguments

9. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 703 305-4341. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703 305-4729. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9314 for regular communications and 703 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-3900.

skl
August 1, 2002

JASON CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600